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10/828,413	04/20/2004	Hatsuo Shimizu	17648	4531

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EXAMINER

SMITH, PHILIP ROBERT

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3739

DATE MAILED: 07/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/828,413

Applicant(s)

SHIMIZU ET AL.

Examiner

Philip R. Smith

Art. Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-8,10,13-16 and 18-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-20 is/are allowed.
- 6) ☒ Claim(s) 1,2,5-8,10 and 13-16 is/are rejected.
- 7) ☒ Claim(s) 21 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

- [01] Outstanding claim objections are withdrawn in view of the amendments of 4/21/2006.

Claim Rejections - 35 USC § 103

- [02] The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

- [03] Claims 1-2, 5-8, 10, 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gazdzinski (2001/0051766) in view of Ahn et al (2002/0177884).

- [04] With regard to claims 1 & 10: Gazdzinski discloses a wireless in-vivo information acquiring system comprising:

[04a] an external device ("external monitoring and control device," or "MCD 800," [0150]) that is disposed on the outside of the body of the patient,

- wherein the external device includes a power source ("power transfer circuit 700," [0167]) that outputs a power-supply signal for supplying power to a body-insertable device that is inserted into a body of a patient to execute a predetermined function;
- a power supply signal transmitting unit ("coil 710 of power transfer terminal 712," [0167]) that wirelessly supplies the power supply signal from the power source to the body-insertable device that is inserted into

the body;

- a drive control signal (signals generated to "control the operation of ... the probe 300 via data signals transmitted to the probe during startup and operation," generated by "microprocessor 906," [0171]) for controlling the predetermined function of the body-insertable device, the drive control signal indicating whether to request in-vivo information ("microprocessor 906 of the MCD generates and passes control data to the microcontroller 520... so as to initiate operation of the LED 504, collection of image data via the CCD array 402, and subsequent processing/transfer of the collected data," [0171]);

[04b] a body-insertable device that is inserted into a body of a patient comprising:

- a function executing unit that executes a predetermined function to acquire in-vivo information on the body of the patient ("the CCD array is driven by the parallel and serial drivers 516, 518 based on a user-defined clock signal output from the clock/timer 524 and controlled by the microcontroller 520," [0160]);
- a power-supply signal receiving unit ("coil 714 of the power transfer terminal(s) 716," [0167]) that receives a power-supply signal wirelessly transmitted from outside as a power for driving the function executing unit; and
- a power accumulating unit that receives a power supply signal ("battery

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665," [0043]);

- a control signal detecting unit that controls the function executing unit based on the drive control signal detected (composing "microcontroller 520," [0155]).
- a system controller (further composing "microcontroller 520," [0155]) that controls the function executing unit to execute the predetermined function while supplying power accumulated in the power accumulating unit to the function executing unit when the drive control signal indicates a request for in-vivo information. and stops supplying the power to the function executing unit when the drive control signal does not indicate the request for in-vivo information ("switches power to the remaining (non-powered) probe components such as the SHC 514 and ADC 512 and generates the necessary signals to the various probe components ...so as to initiate operation of the LED 504, collection of image data via the CCD array 402, and subsequent processing/transfer of the collected data," [0171]);.

[05] Gazdzinski does not disclose:

[05a] a control signal superposing unit (composing the external device) that superposes the drive control signal on the power supply signal from the power source

[05b] a separating unit (composing the body-insertable device) that separates the

drive control signal from the power supply signal.

[06] Ahn discloses the following in [0046]:

FIG. 8 is a functional block diagram of another embodiment of a charging system in accordance with the present invention. The embodiment of FIG. 8 is similar to those in FIGS. 6 and 7 except that filters are provided in primary and secondary sides instead of the antennas. The filters 810, 820 superpose and retrieves a data signal on and from the power signal that is inductively transmitted from the primary winding to the secondary winding. Known methods of using power line for data communication can be utilized for embedding data in the power signal. For example, an information signal in a different bandwidth is combined with the power signal, transmitted to the other side and recovered by separating the information signal from the power signal.

[07] At the time of the invention, it would have been obvious to a person of ordinary skill in the art that the drive control signal and power supply signal disclosed by Gazdzinski be transmitted by a single inductive coupling, as disclosed by Ahn, as opposed to a pair of inductive couplings (one for each signal) as disclosed by Gazdzinski. This would require that the external device disclosed by Gazdzinski include a control signal superposing unit ("filter 810" as disclosed by Ahn); and that the control signal detecting unit disclosed by Gazdzinski ("microcontroller 520," as noted above) further comprise some structure which allows it to detect the drive control signal superposed on the power supply signal ("filter 820" as disclosed by Ahn).

[08] A skilled artisan would be motivated combine these teachings in order to reduce the number of coils within the body-insertable device, components which are known to be relatively bulky and massive in comparison to filters such as those disclosed by Ahn.

[09] With regard to claim 2: As noted above, Gazdzinski discloses a drive control signal

(signals generated to "control the operation of ... the probe 300 via data signals transmitted to the probe during startup and operation," generated by "microprocessor 906," [0171]) for controlling the predetermined function of the body-insertable device on the power supply signal from the power source. This inherently requires a control information input unit that outputs the drive control signal upon receiving control information about controlling the function executing unit.

[10] With regard to claims 5 & 13: As noted above, Ahn discloses in [0046] that "an information signal in a different bandwidth is combined with the power signal, transmitted to the other side and recovered by separating the information signal from the power signal."

[11] With regard to claims 6-7 & 14-15: As noted above, the function executing unit disclosed by Gazdzinski is a sensor that acquires in-vivo information specific to a portion to be diagnosed in the body of the patient, including an imaging unit ("CCD array") that captures an image of the portion to be diagnosed in the body of the patient. Gazdzinski further discloses that the control information received by the control information input unit includes information on number of frames to be captured by the imaging unit per predetermined time, and the drive control signal output from the control information input unit includes a signal for controlling the number of frames to be captured by the imaging unit per predetermined time ("the CCD array is driven by the parallel and serial drivers 516, 518 based on a user-defined clock signal output from the clock/timer 524 and controlled by the

microcontroller 520," [0160]).

- [12] With regard to claims 8 & 16: Gazdzinski further discloses in [0171] that "The probe microcontroller 520 ... generates the necessary signals to the various probe components (based on its internal programming) so as to initiate operation of the LED 504, collection of image data via the CCD array 402, and subsequent processing/transfer of the collected data." The "LED 504" is an illuminating unit that emits light to illuminate at least the portion to be diagnosed in the body of the patient. The "initiat[ion of] operation" disclosed by Gazdzinski inherently requires a system controller that controls a state of power supply for driving the function executing unit. The initiation of the illumination operation is inherently controlled by the control information input to the system controller, and the drive control signal output from the system controller inherently includes a signal for controlling power supply and illumination.

Allowable Subject Matter

- [13] Claims 18-20 are allowed.
- [14] Claims 21 & 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
- [15] The Prior Art does not disclose a level determining unit that determines a level of power supply signal to transmit a level determining signal indicating the level of power to an external device, as recited in, for example, claim 22.

Response to Arguments

- [16] Applicant's arguments filed 4/21/2006 have been fully considered but they are not persuasive.
- [17] App asserts that "independent claims 1, 10 and 18, as amended, are not rendered obvious by the cited references because neither the Gazdzinski patent application nor the Ahn patent application, whether taken alone or in combination, teach or suggest a wireless in-vivo information acquiring system, a body-insertable device and an external device, respectively, having the features discussed above." It is maintained that the recited claims are obvious in view of Gazdzinsky and Ahn, as noted above.

Conclusion

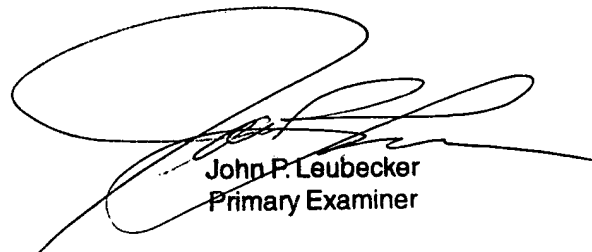
- [18] Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
- [19] A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will

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the statutory period for reply expire later than SIX MONTHS from the date of this final action.

- [20] Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip R. Smith whose telephone number is (571) 272 6087 and whose email address is philip.smith@uspto.gov. The examiner can normally be reached between 9:00am and 5:00pm.
- [21] If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Linda Dvorak can be reached on (571) 272 4764.
- [22] Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

prs



John P. Leubecker
Primary Examiner